

REMARKS/ARGUMENTS

The Examiner's statement of the chain of priority of this application, as stated on page 2 of the October 28, 2004 Examiner's action, is correct.

Applicant notes that Claim 4 was allowed and that claims 15 – 17, 26, 28, and 35 were objected to as being dependent on a rejected base claim, but were recognized to be allowable if re-written in independent form. As will be set forth in more detail hereinafter, some amendments have been made to Claim 4 to as to more clearly describe the invention set forth. These amendments were not made for reasons of patentability, but rather to more aptly describe the invention.

Claim 15 has been re-written in independent form and is submitted to now be allowable. Claims 16 and 17 depend from Claim 15 and are submitted to be allowable along with Claim 15.

Claim 26 has been re-written in independent form and is submitted to be allowable. Claim 28 has been cancelled because it was believed to be duplicative with Claim 27. It is submitted that Claim 27, which is dependent upon Claim 26, is now allowable along with Claim 26.

Paragraph 2 Of Examiner's Action

Claim 42 has been amended so as to include the requirement of a trimming station for trimming the bound book to predetermined finished dimensions. It is pointed out that Claim 1 has no requirement of a trimming station. Accordingly, it is submitted that Claim 42 is not duplicative with Claim 1.

Claim 43 is dependent from Claim 1 and includes the requirement of a second text page printer. Accordingly, it is not duplicative with Claim 1 and is submitted to be allowable along with Claim 1 for the reasons as set forth below regarding Claim 1.

Paragraphs 2 and 3 of Examiner's Action - §112 Objections

Claims 2 and 31 – 33 were rejected under §112 on the grounds of indefiniteness.

Specifically, Claim 2 was rejected under 35 U.S.C. § 112 for not positively claiming “said second book” in line 6. Now, Claim 2 has been re-written in independent form so as to include the limitations of its base claim, Claim 1, as set out in the Preliminary Amendment, and has been amended so as to positively claim “a second book”. Thus, it is submitted that Claim 2, as amended, is properly allowable.

Claim 31 was rejected because it recited “said second text page printer” without sufficient antecedent basis. Now, Claim 31 has been amended to correct this problem. First, it will be noted that Claim 31 relates back to Claim 26, which clearly recites “a second text page printer”. Specifically, the chain of dependency for Claim 31 relates back to Claim 30, to Claim 29, and then to Claim 26. Accordingly, there is now proper antecedent basis for Claim 31.

Since claims 31 - 33 are dependent from Claim 30, it is submitted that there is also now proper antecedent basis for these claims.

Claim Rejections – Prior Art Based on §102 and §103.

In paragraph 6, Claims 1, 5, 7-10, 13, 14, 18 – 24, 36 – 39 and 42 were rejected as being anticipated under §102(e) by Dim et al, U. S. Patent 6,460,843. In paragraph 7, Claims 1, 5 – 8, 13, 14, 18, 25, 34, 36, 37 and 42 were rejected under §102(e) as

being anticipated by Yamaguchi (U. S. Patent 6,206,358). In paragraph 9, claims 1, 3, 5, 7 – 14, 18 – 24 and 36 – 41 were rejected as being obvious over Gayoso (U. S. Patent 6,416,082) in view of Dim et al.

As will be specifically pointed out, these claims, particularly as herewith amended are not anticipated by Dim et al. or by Yamaguchi, and are patentably distinguishable over these references and the other prior art of record including Gayoso. For simplicity, it is believed easier to discuss both the anticipation and obviousness rejections of the claims in the order of the claims.

Claim 1

Specifically, Claim 1 has been herewith amended to include the provision of an accumulator that receives the text pages printed by the text printer so as to form a book block. One example of a book block accumulator is transfer mechanism 112 described at page 13 of the specification, which receives the pages of text printed by printer 110 in tray 134 described on page 17. The tray, in turn, will transfer the book block to the carriage.

It is respectfully submitted that the prior art references to Dim et al. (U. S. Patent 6,460,843), Yamaguchi et al. (U. S. Patent 6,206,358), Gayoso (U. S. Patent 6,416,082), and the applicant's U. S. Patent 6,193,458 have no disclosure or suggestion of any structure that will accumulate the text pages printed by a printer to as to for a book block and to transfer the book block to a carriage. Accordingly, it is submitted that Claim 1, as amended, is neither anticipated nor made obvious by any of the above prior

art references, whether considered singly or jointly. Allowance of Claim 1, as amended, is requested.

Claim 3

Claim 3, an independent claim, was rejected in Paragraph 9 of the Remarks as being obvious over Gayoso in view of Dim et al. Claim 3 also has been amended to now describe that the claimed apparatus as having a "text page accumulator" which accumulates the text pages from the text page printer so that the pages constitute a book block. This is not disclosed or suggested by either Gayoso or by Dim et al. Further, Claim 3 has been amended to specify a "trimming station" located along the workpath. At the trimming station, the excess margins (if such excess margins are present¹) of the book are trimmed so that the bound book is of a predetermined finished size. Again, the provision of a trimming station is not disclosed or suggested by the prior art. In view of the above, it is submitted that the prior art is devoid of any suggestion or teaching of the "text page accumulator" and of the "trimming station" such that the apparatus described by Claim 3 would not be obvious to one of ordinary skill in the art. Accordingly, allowance of Claim 3 is solicited.

Claim 4

As noted in Paragraph 10 of the Remarks, Claim 4 was allowed. However, certain amendments have herewith been made to Claim 4, as shown above, so as to clarify the language of the claim and to omit certain limitations that are not necessary for the claimed apparatus to operate. These amendments were not necessitated for

¹ It will be understood that it may not be desirable or necessary to trim the margins of a particular book to be printed and bound, in which case the trimming station need not be operated so as to trim the book.

reasons of patentability, but rather to more aptly describe the subject matter that the inventor believes describes one aspect of his invention.

Specifically, in lines 8 and 9, the words "relating to a first book" and the words "the said" have and have been replaced with "a" so as to more aptly describe "a first book". Further in line 9, the term "thickness of" has been substituted for the term "number of pages in" said first book. This refers to information that has been stored in (or communicated to) the computer control system relative to the first book. It will be appreciated that "thickness of the book" is broader than the term "number of pages" because the thickness of the book not only takes into account the number of pages in the book, but also the type and weight of paper on which the text pages are to be printed. It will be appreciated that the weight of the paper may increase or decrease the thickness of the book and thus it is more proper to refer to the thickness of the book rather than to the number of pages because it is the thickness that is of most concern when binding the book. It will be further appreciated that because paper pages will absorb moisture from the air, the thickness of a book block may increase or decrease, depending on the humidity conditions of the location where the book is printed. Of course, with book blocking comprising hundreds of pages, these small differences in thickness of each page will add up and cause a substantial change in the thickness of the book block even though the number of pages is the same.

It is submitted that the changes made to Claim 4 clarify the invention described in Claim 4, and that Claim 4 remains allowable.

Claim 5

Claim 5 was rejected as being anticipated by Dim et al. (Paragraph 6 of the Remarks) and by Yamaguchi (Paragraph 7). In Paragraph 9, Claim 5 was rejected as being obvious over Gayoso in view of Dim et al.

Here, Claim 5 has been amended to specify that a trimming station receives the bound book and trims the bound book to predetermined finished dimensions. This represents a major change from the prior art and results in a superior finished book. None of the prior art references cited by the Examiner against Claim 5 has any disclosure of a trimming station for trimming the book to a predetermined finished size. Instead, all of the prior art book binding apparatus attempts to accurately position the center of the cover with respect to the book block such that it is not necessary to trim the finished book.

In Fig. 1 of Dim et al. (6,460,843), the steps of the binding method therein disclosed are set out in block diagram form. It will also be noted that no post-binding trimming operation is disclosed or suggested. With respect to the cover, it will be noted in Dim et al. that the cover must be trimmed and scored to a predetermined dimension before it is bound to the text pages. It will be appreciated that with book blocks containing hundreds of pages and with the thickness of the book block varying substantially due to differences in the thickness of each page and because the thickness of the paper can vary depending on the humidity in the space where the binding operation is carried out, it is difficult to achieve a bound book where the edges of the cover are in good register with the edges of the text pages. While in some books, it is acceptable to have un-trimmed text pages, this is generally not thought by those

skilled in the art to result in a commercially acceptable perfect bound book because the edges of the text pages may extend beyond the edges of the cover or vice versa. If the relatively soft cover (which is typically made of paper) of perfect bound paperback books extends beyond the edges of the text pages, the cover will become bent and misshaped and the book will not sit properly on a shelf. Therefore, with a perfect bound book, it is important that the edges of the cover and the edges of the text pages be in close register. It is, therefore, important in producing a print on demand perfect bound book that booksellers and consumers will accept as readily as a conventionally printed perfect bound book that the book be trimmed to predetermined finished dimensions such that edges of the text pages are flush with the edges of the cover.

Similar to Dim et al. Yamaguchi (6,206,358) has no disclosure or suggestion of trimming the book after it is bound.

It will be noted that Gayoso (6,416,082) goes to exceptional lengths so as to center the cover with respect to the book block, but does not disclose trimming the margins of the book. Specifically, Gayoso discloses forming the cover 20 with an alignment feature 40 comprising a center cut 44 and two locator points 42 on opposite sides of the notch. The center cut 44 and the locator points 42 are used to properly center the cover 10. In Gayoso, there is no disclosure of an integrated apparatus for the on demand printing of a book. Instead, Gayoso discloses (see Fig. 3) that a processing system 110 receives a book request and generates instructions for printing the cover and the body of the book. Then a cover preparation system 130 prints, laminates and scores the cover. A book block preparation system 120 prints and jogs

the text pages forming the book block. However, as disclosed at Col. 7, ll. 20 – 23 of Gayoso, the bookbinder is a conventional perfect binder that is manually operated. Moreover, such systems do not include a trimmer. There is no disclosure of the trimmer 144 shown in Fig. 3 or described at Col. 8, l. 11, other than to specify a “trimmer”. However, because there is no disclosure that the trimmer 144 is integrated into a print on demand book printing and binding system, it is submitted that one skilled in the art would understand that Gayoso uses a conventional trimmer in a separate trimming operation after the book has been bound. In short, the method of Gayoso would not result in a finished perfect bound and trimmed book, but instead would require a subsequent trimming operation.

Because the prior art does not teach or suggest an integrated print on demand book binding system that prints, binds and trims the book, it is submitted that Claim 5 is not anticipated by or rendered obvious by the prior art.

Claim 6

Claim 6 stands rejected as being anticipated by Yamaguchi (Paragraph 7) and as being obvious over Dim et al. in view of Gayoso (Paragraph 8). Because Claim 6 is dependent upon Claim 5 and because Claim 5, as amended and as shown above, is properly allowable over Yamaguchi and over Dim et al. in view of Gayoso, Claim 6 is also submitted to be properly allowable.

Claims 7 and 8

Claims 7 and 8 were rejected as being anticipated by Dim et al. (Paragraph 6), as being anticipated by Yamaguchi (Paragraph 7), and as being obvious over Gayoso in

view of Dim et al. (Paragraph 8). Claims 7 and 8 both depend from Claim 5 and are submitted to be properly allowable along with Claim 5 for the reasons set forth above.

Claims 9 and 10

Claim 9 stands rejected as being anticipated by Dim et al. (Paragraph 6) and as being obvious over Gayoso in view of Dim et al. (Paragraph 9). Claim 9 depends from Claim 5 and is submitted to be properly allowable along with Claim 5.

Claim 10 is dependent from Claim 9 and is submitted to be allowable for the reasons set out above.

Claim 11

Claim 11 has been rejected as being obvious over Gayoso in view of Dim et al. (Paragraph 9). Claim 11 depends from Claim 5 and further specifies that the trimming station has a nest, which receives the bound book in a known position with a shear blade being movable relative to the book so as to shear predetermined amounts from the edges of the book so that the finished book has predetermined dimensions. As noted above, none of the prior art relied on by the Examiner has any disclosure of suggestion of an in-line printer that trims the bound book to predetermined dimensions. Moreover, none of the prior art suggests that the trimming station has a nest for receiving the book to be trimmed. Accordingly, it is submitted that Claim 11 is not rendered obvious by Gayoso in view of Dim et al. and is properly allowable.

Claims 12 - 14

Claim 12 is dependent from Claim 11 and further describes the nest in the trimmer. It is respectfully submitted that Claim 12 is allowable along with Claim 11.

Claim 13 depends from Claim 5 and is submitted to be allowable along with Claim 5 for the reasons set forth above.

Claim 14 depends from Claim 13 and is allowable along with claims 5 and 13.

Claim 15

Claim 15 has been re-written in independent form so as to include the requirements of Claim 5 from which it originally depended. Claim 15 further specifies the provision of a second book printing station and how the carriage is operatively associated with the second book printings station to result in a second book being printed. It will be appreciated that with the provision of a second book printing station, the apparatus may be printing the text of a second book while a first book is being bound and trimmed thus significantly increasing the throughput of the apparatus. None of the prior art has any disclosure of such a second book printing station and thus Claim 15 is submitted to be properly allowable.

Claims 16 and 17

Claims 16 and 17 further describe the apparatus of Claim 15 and the location of the second book printing station with respect to the first book printing station. Claims 16 and 17 are submitted to be allowable along with Claim 15 because the prior art does not describe or suggest such an apparatus with two book printing stations.

Claim 18

Claim 18 has been re-written in independent form by incorporating the requirements of its base claim, Claim 5, and adds the requirement of a transfer mechanism positioned between the book printing station and the carriage to receive

said text pages printed by the printing station and to form said first book block for said first book, said transfer mechanism being operable to transfer said book block to said carriage. As noted above in regard to Claim 5, as herewith amended, none of the prior art references discloses or suggest the provision of such a mechanism for transferring the book block to the carriage. Accordingly, Claim 18 is properly allowable.

Claims 19 – 25

Claims 19 – 24 now depend from Claim 18 and are submitted to be allowable along with Claim 18 for the reasons set forth above.

As noted, Claim 25 has been canceled.

Claim 26

Claim 26 was indicated to be allowable if re-written in independent form. Here, Claim 26 is re-written in independent form and allowance of Claim 26 is solicited.

Claim 28

Claim 28 has been cancelled as being duplicative with claim 27.

Claims 27 and 29 - 33

Claims 27 and 29 – 33 depend from Claim 26 and further describe the invention of Claim 26, which was indicated as being allowable. Accordingly, these claims are also believed to be properly allowable and allowance of these claims is solicited. Note that Claim 28 has been canceled because it was duplicative with Claim 27 when the latter was amended to depend from Claim 26.

Claim 34

Claim 34 was rejected as being anticipated by Yamaguchi (See Paragraph 7 of the Examiner's Remarks). Claim 34 describes a method of manufacturing a plurality of perfect bound books. Specifically, Claim 34 includes a step of trimming excess margins (if any are present) from one or more edges of the bound book so as to form a book of predetermined finished size. Yamaguchi has no disclosure or teaching of trimming the book after it has been bound. Accordingly, Claim 34 is submitted to be allowable.

Claim 35

Claim 35 was indicated as being allowable if re-written in independent form. Claim 35 depends from Claim 34. As noted above, Claim 34 describes a method, which includes the step of trimming the book after it has been bound. As noted, Yamaguchi does not suggest such a trimming step. Accordingly, Claim 35 is believed to be properly allowable without being re-written in independent form.

Claim 36

Claim 36 is another independent claim describing applicant's method of printing a book block in which the text pages are printed on a text printer. As the text pages are discharged from the text printer, they are accumulated as they are discharged from the printer so as to form a book block. Then, after the completion of printing of the predetermined number of pages to form the book block, the book block is transferred to a carriage.

Claim 36 has been rejected as being anticipated by both Dim et al. and by Yamaguchi (see Paragraphs 6 and 7 of the Remarks) and as being obvious over Gayoso in view of Dim et al. (Paragraph 8 of the Remarks). However, none of these

references discloses or suggests a step in which the text pages are accumulated to form a book block and in which the book block is discharged into a carriage. Accordingly, it is respectfully submitted that Claim 36 is not anticipated or rendered obvious by these references and thus should be allowed.

Claims 37 - 39

Claims 37 – 39 depend from Claim 36 and further define the method described in Claim 36. Specifically, Claim 37 specifies that the text pages are accumulated on a tray and that the book block is discharged by gravity from the tray into the carriage. The prior art does not disclose or suggest such a gravity discharge for the text pages.

Claim 38 includes the step of jogging the pages while they are supported in the tray. Because none of the prior art references disclose or suggest the use of such a tray to receive the text pages discharged from the text page printer, Claim 38 is clearly allowable.

Claim 39 further describes the method as including the step of printing a cover for the book to be bound. Because Claim 39 depends from Claim 38, Claim 39 is submitted to be allowable.

Claim 40

Claim 40 describes a method of manufacturing a plurality of perfect bound books where each of the books may be of a different size and have a different number of pages. It will be particularly noted that Claim 40 includes the provision of a step of trimming the bound book at a trimming station, and specifies moving the bound book from the binding station to the trimming station. As previously noted, none of the prior

art references teaches or discloses trimming the book after it has been bound as part of the method, much less an integrated process in which the book (or component parts) are moved from one station to the other. Accordingly, it is submitted that Claim 40 is neither anticipated or rendered obvious by the prior art of record.

Claim 41

Claim 41 depends from Claim 40 and further specifies the printing, binding and trimming of a second book after the first book has been bound. This is not suggested by any of the prior art references. Specifically, it is submitted that Claim 41 is properly allowable over Gayoso in view of Dim et al. and should be allowed.

Claim 42

Claim 42 stands rejected as anticipated by either Dim et al. or Yamaguchi. Claim 42 has been herewith amended so as to specify a trimming station for trimming the bound book to predetermined finished dimensions. As has been previously noted, none of the cited prior art references disclose or suggest trimming the bound book to size after it has been bound. Accordingly, it is believed that Claim 42, as amended, is properly allowable.

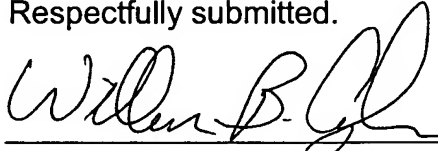
Claim 43

Claim 43 depends from Claim 1 and further specifies apparatus for printing a second book. As has been pointed out above, none of the prior art references discloses or suggests apparatus that prints a second book. Accordingly, Claim 43 is believed to be allowable along with Claim 1.

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In view of the above, it is respectfully submitted that claims 1 – 24, 26, 27, and 29– 43 are properly allowable and a Notice of Allowance of these claims is solicited.

Respectfully submitted.



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